GOVERNMENT OF INDIA
TARIFF COMMISSION

REPORT
ON THE
CONTINUANCE OF PROTECTION
TO THE
TITANIUM DIOXIDE INDUSTRY

सत्यमेव जयते

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GOVERNMENT OF INDIA

MINISTRY OF COMMERCE AND INDUSTRY

NOTIFICATION

TARIFFS

New Delhi, the 2nd *July* 1955.

No. 8(1)TB/55.—WHEREAS the Central Government is satisfied after due inquiry that the duty chargeable under the Indian Tariff Act, 1934 (XXXII of 1934) in respect of the article specified in Item No. 30(14) of the First Schedule to the said Act, and characterised as protective in the third column thereof, has become ineffective for the purpose of securing the protection intended to be afforded by it to similar articles manufactured in India;

Now, THEREFORE, in exercise of the powers conferred by sub-section (*1*) of Section 4 of the said Act, as in force in India and as applied to the State of Pondicherry, the Central Government hereby increases, with effect from the 2nd July, 1955, the duty of customs on the said article so that the duty chargeable shall from the said date be as specified in column (3) of the table annexed hereto.

THE TABLE

Item No. of Tariff	Name of Article	Rate of duty
1	2	3
30(14)	Titanium Dioxide	
	(a) of British manufacture	34% *ad valorem*
	(b) not of British manufacture	44% *ad valorem*

L. K. JHA,
Joint Secretary to the Government of India.

PERSONNEL OF THE COMMISSION

Shri M. D. BHAT	Chairman
Shri B. N. ADARKAR, M.A. (Cantab.)	Member
Shri B. N. DAS GUPTA, B.A., A.S.A.A. (London), F.C.A.	Member
Shri C. RAMASUBBAN	Member
Dr. RAMA VARMA	Secretary

PERSONNEL OF THE PANEL WHICH HEARD THE CASE

Shri M. D. BHAT	Chairman
Shri B. N. DAS GUPTA	Member
Shri C. RAMASUBBAN	Member

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GOVERNMENT OF INDIA

MINISTRY OF COMMERCE AND INDUSTRY

New Delhi, the 2nd July 1955.

RESOLUTION

TARIFFS

No. 8(1)TB/55.—The Tariff Commission has submitted its report on the continuance of protection to the *Titanium Dioxide* industry beyond 31st December 1955, on the basis of an enquiry undertaken by it under Sections 11(e) and 13 of the Tariff Commission Act, 1951. Its recommendations are as follows :—

(1) Protection to the titanium dioxide industry should be continued up to the 31st December, 1957, by levying protective duty at the existing rates, namely, 25-1/5 per cent. *ad valorem plus* one-fourth of the total duty for products of British manufacture and 35-1/5 per cent. *ad valorem plus* one-fourth of the total duty for products of non-British manufacture.

(2) The Travancore Titanium Products Ltd., should be permitted during the period of continuance of protection to restrict its production to the anatase type alone, and the country's needs of rutile pigment should be met from imports.

(3) Until such time as the Travancore Titanium Products Ltd., are not in a position to manufacture rutile type of pigment, imports of this material should be carefully regulated and permitted only to the extent of actual requirements of the consumers.

(4) Government should give their attention to the question of securing general acceptance of the practice of sale of paints by volume instead of by weight and examine the feasibility of undertaking legislation to this effect.

(5) If the technical investigation of the financial effects of installing a 25 ton sulphuric acid plant at the factory of Travancore Titanium Products Ltd., shows that installation of such a plant would ultimately result in reducing the cost of production of titanium dioxide appreciably, the Government of India should, in consultation with the Travancore-Cochin State Government, consider the feasibility of providing the requisite finance to Travancore Titanium Products Ltd., for the installation of a 25 ton sulphuric acid plant at their own factory.

(6) *Ad hoc* licences to actual users of lithopone should be carefully screened and the tendency to use lithopone extensively, discouraged.

(7) Statistics of imports of titanium dioxide should be maintained separately for rutile and anatase types of pigments.

(8) The Travancore-Cochin State Government should render assistance to the Company to eliminate delays in the transport of sulphuric acid due to congestion in the canal from Alwaye to Trivandrum.

(9) Ilmenite sands which are owned by Government should be made available to Travancore Titanium Products Ltd., after recovering the "basic charge" of Rs. 14·77 only per ton.

(10) During the period of protection the Travancore Titanium Products Ltd., should strengthen their financial position by wiping out their losses, by repaying a part of the loan taken from the Industrial Finance Corporation together with interest thereon, and by building up reserves.

2. Government accept the Commission's recommendation regarding extension of the period of protection up to the 31st December, 1957, and steps will be taken to implement this recommendation in due course. As regards the quantum of tariff protection, it has been decided, with the concurrence of the Commission, that the protective rates of duty on titanium dioxide should be fixed at 44 per cent. *ad valorem* (standard) and 34 per cent. *ad valorem* (preferential) and that the item should be exempted from surcharge. The necessary notifications have been issued to-day.

3. They also accept recommendation (7) and will take suitable steps to implement it.

4. As regards recommendation (2), Government recognize that since with the present plant and machinery, simultaneous production of both anatase and rutile types of pigments is not feasible, some loss of capacity is inevitable from alternate production. This would be wasteful. At the same time it may not in all circumstances be desirable for the country to depend entirely on imports for rutile pigments, or for the industry to count on exports of the anatase type. The Travancore Titanium Products Ltd., should therefore keep the position under periodic review in consultation with the Government.

5. Government have noted recommendations (3), (4), (5) and (6).

6. The attention of the Travancore-Cochin State Government and the Travancore Titanium Products Ltd., is invited to recommendations (8) to (10).

L. K. JHA,

Joint Secretary to the Government of India.

REPORT ON THE CONTINUANCE OF PROTECTION TO THE TITANIUM DIOXIDE INDUSTRY

Origin of the case

1. (a) The claim of the titanium dioxide industry to protection or assistance was first referred to the Tariff Commission by the Government of India in the Ministry of Commerce and Industry by their resolution No. 1-T(21)/52, dated 15th November, 1952, on an application made to them by Travancore Titanium Products Ltd., Trivandrum, the only manufacturer of titanium dioxide in India. The Commission, after a detailed inquiry, submitted its report on 29th July, 1953, recommending a duty-*cum*-subsidy scheme of protection to be in force until 31st December, 1954, by:—

(i) The conversion of the then existing revenue duty of 25·2% preferential into an equivalent preferential protective duty, the standard rate to be fixed in accordance with the terms of the Indo-British Trade Agreement of 1939;

(ii) The grant of a subsidy of Rs. 300 per ton on the sales of titanium dioxide produced by Travancore Titanium Products Ltd., subject to a maximum of Rs. 2,70,000 per year; and

(iii) The refund of customs duty on titanium tetrachloride used by the Company as raw material in the manufacture of rutile type of titanium pigment.

The Commission also recommended that a review of the case should be undertaken by it before the end of 1954.

(b) The Government of India in the Ministry of Commerce and Industry by their resolution No. 8(10)-T.B./52, dated 9th December, 1953, accepted the recommendation to protect the industry by the conversion of the revenue duty at the then existing rates into protective duty to be in force up to 31st December, 1954. Government, however, stated that there was no need to implement the recommendation to grant a subsidy as the Company had by then received a large export order which was expected to enable it to maintain economic production without assistance in that form. No relief regarding the import duty on titanium tetrachloride was considered necessary as the Company had proposed to confine its production to the anatase type of titanium pigment.

(c) As the Commission was unable to undertake a detailed inquiry into the case before the end of December 1954, it recommended continuance of protection to the industry for a further period of one year. This recommendation was accepted by Government and protection was extended till 31st December, 1955, by the Indian Tariff (Third Amendment) Act, 1954. The present inquiry has been undertaken under Section 11(e) read with Section 13 of the Tariff Commission Act, 1951, under which the Commission has been empowered to inquire into and report on any further action required in relation to the protection granted to an industry, with a view to its increase, decrease, modification or abolition, according to the circumstances of the case.

Method of inquiry

2. (a) On 29th September, 1954, a special questionnaire was sent to Travancore Titanium Products Ltd. Simultaneously, the Secretary to Government, Development Department, Travancore-Cochin State, was requested to send a detailed memorandum on the present position of the industry furnishing information, in particular, regarding supplies and price of ilmenite, and the steps taken to reduce the cost at which sulphuric acid was being sold to Travancore Titanium Products Ltd., by Fertilizers and Chemicals (Travancore) Ltd., Alwaye. The Industrial Adviser (Chemicals), Development Wing, Ministry of Commerce and Industry, was requested to furnish a memorandum on the industry and information regarding demand for titanium pigment and other white pigments, and steps taken by Government to bring about the general acceptance of the practice of sale of paints by volume instead of by weight. The Director-General of Commercial Intelligence and Statistics, Calcutta, was addressed for statistics of imports of titanium dioxide (anatase and rutile separately), and the Collectors of Customs for c.i.f. prices, clearing charges, etc., of titanium dioxide imported into the country. A press note was issued on 20th December, 1954, inviting firms, persons or associations interested in the titanium dioxide industry or in industries in the products of which this pigment was used, to forward notes or memoranda giving their views on the question of protection to the industry. A list of persons, associations and others to whom the Commission's questionnaires were issued and from whom replies or memoranda were received is given in Appendix I.

(b) Shri S. S. Mehta, Technical Director (Chemicals) of the Commission visited the factory of Travancore Titanium Products Ltd., Trivandrum, from 27th December to 29th December, 1954. Shri S. V. Rajan, Assistant Cost Accounts Officer, visited the above factory from 22nd December to 28th December, 1954 for examining the cost of production of titanium dioxide. Shri C. Ramasubban, Member of the Commission, visited the factory on 5th and 6th January, 1955, and had discussions with the Secretary, Development Department, Travancore-Cochin State Government, and the Director of Industries. A public inquiry was held at the Commission's office at Bombay on the 13th January, 1955. A list of persons who attended the public inquiry is given in Appendix II.

Recommendations made by the Tariff Commission in its report (1953) on matters other than tariffs

3. We set out below the recommendations made by the Commission in its report (1953) on matters other than tariffs and indicate the extent to which they were implemented.

(a) *Imports of the special type of titanium pigment required by manufacturers of vitreous enamelware should be permitted to the extent of their actual requirements.*

The representative of the Vitreous Enamellers' Association, Calcutta, who attended the public inquiry stated that manufacturers of enamelware had no difficulty in obtaining their supplies of the pigment.

(b) *The Travancore-Cochin State Government should supply ilmenite to the Company after receiving from it only the "basic charge" for processing the sands.*

The "basic charge" in 1953 was reported to be Rs. 18 per ton. The State Government reduced the price of ilmenite from Rs. 48-10-9 per ton to Rs. 27 per ton.

(c) *The Travancore-Cochin State Government should take steps to reduce the cost at which sulphuric acid is being supplied to the Company by the Fertilizers & Chemicals (Travancore) Ltd., Alwaye.*

Some relief was given to the Company by reduction of the consumption factor of sulphur from 0·375 per ton to 0·36 per ton of acid.

(d) *The cost of production of sulphuric acid in India should be examined, and, if necessary, suitable action should be taken under the Industries (Development and Regulation) Act to maintain the prices of this essential material at a reasonable level.*

We are informed that the Development Council for Heavy Chemicals (Acids and Fertilisers) set up by the Government of India in March 1953 made a study of the above question and observed in its report for the year ended March 1954 that, on the information furnished by various firms in regard to prices and cost of production, it came to the conclusion that the prices of about Rs. 200 to Rs. 220 per ton of sulphuric acid then prevailing at Bombay were reasonable.

(e) *The National Chemical Laboratory, Poona, should continue its research work relating to the production of titanium dioxide by the hydrolysis of titanium tetrachloride under controlled conditions, determine the operating details and establish the economic advantages of the process with a view to the utilisation of a large quantity of chlorine and the conservation of sulphuric acid.*

No significant steps appear to have been taken to implement this recommendation.

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(f) *Adequate supplies of blanc fixe or similar extenders should be ensured to all users of titanium dioxide who are in need of such extenders.*

The import policy for blanc fixe has been greatly liberalised. Consumers of titanium dioxide are able to obtain their requirements at reasonable prices.

(g) *It is vital to the building up of the titanium pigment industry in India that adequate supplies of both types, anatase as well as rutile, should be continuously maintained.*

The supply position of anatase pigment which is indigenously manufactured is satisfactory. Sufficient quantities of rutile titanium dioxide are allowed to be imported by actual users.

(h) *Travancore Titanium Products Ltd., should maintain their own selling organization at the major consuming centres in the country and provide facilities for technical advice by appointing qualified men at such centres.*

The Company's sole selling agents have their offices at the main consuming centres and have secured the services of a qualified paint technologist who has been trained in the Technical Sales Service Laboratory of British Titan Products Co. Ltd., in the United Kingdom. The other salesmen (who are maintained by the Selling Agents) are being trained by the technologist.

(i) *The Indian Standards Institution should be requested to complete the work of providing paint formulations requiring the inclusion of titanium pigments.*

The Indian Standards Institution has issued amendments to the original standards given in Appendix IV of the Commission's report (1953), with a view to providing alternative compositions allowing for the usage of titanium dioxide.

(j) *The practice of purchasing paints by weight and not by volume could be changed by the joint efforts of the concerned trade associations. Government should bring together the various interests concerned with a view to securing the general acceptance of the practice of sale of paints by volume.*

The Development Wing of the Ministry of Commerce and Industry has stated that it has informally conveyed to the paint industry Government's view that as the Paint Federation and the Indian Paint Manufacturers' Association produce 75 to 80 per cent. of paints in the country, it should be possible for them to arrive at an understanding with the trade for sale of paints on the basis of volume instead of weight.

(k) *Statistics relating to imports of titanium dioxide should be maintained separately by Collectors of Customs and the Director-General of Commercial Intelligence & Statistics.*

Statistics are being maintained as desired since February 1954.

(l) *Every endeavour should be made by the Company to effect economies in operating costs under all possible heads.*

Reduction in operating costs and usage of raw materials has been effected. Details regarding the economies so effected are given in the relevant sections of this report.

Scope of the inquiry

4. The scope of the inquiry includes, as on the last occasion, both types of titanium dioxide, anatase and rutile.

Present position of the industry

5. (a) Travancore Titanium Products Ltd., continue to be the sole producer of titanium dioxide in the country. The authorised capital of the Company is Rs. 75 lakhs and the paid-up capital Rs. 73,10,670. Of the paid-up capital, 52·3 per cent. is held by the Government of Travancore-Cochin State, 22·6 per cent. by British Titan Products Ltd., 11·9 per cent. by A. & F. Harvey Ltd., and 12·7 per cent. by four other companies and 0·5 per cent. by individuals.

(b) When the Commission submitted its report in 1953 the Company's borrowings amounted to Rs. 8,69,799. These borrowings were paid off by the Company during the 1st half of 1954 on its obtaining a loan of Rs. 15 lakhs from the Industrial Finance Corporation. This loan has to be repaid within a period of seven years from 1st March, 1954, the 1st instalment of Rs. 2 lakhs being due on 1st March, 1955, and the subsequent instalments according to a schedule to be submitted by the Company and approved by the Corporation. Out of the sum of Rs. 15 lakhs, Rs. 9,21,632 were appropriated for repayment of all outstanding borrowings, and the balance of Rs. 5,78,368 was utilised towards working capital. According to the published balance sheet of the Company for the year ended December 1953 the accumulated loss incurred by it amounted to Rs. 14,47,060.

(c) The factory was reopened for production on 1st January 1954. The first two weeks were utilised in recommissioning the plant and machinery. Production actually commenced on the 12th of January, but as the manufacturing process is such that two weeks elapse before start of production and emergence of the final product, the output achieved in January was negligible.

(d) Indian Titan Products Ltd., continue to be the managing agents of the Company on the same terms and conditions as were originally agreed upon. The constitution of the Company has undergone an alteration since the middle of 1954 with A. & F. Harvey Ltd., acquiring increased holdings and larger representation on the directorate, and undertaking more responsibility for managing the Company. When effecting the change it was recognised that in the fields of engineering supervision, normal plant maintenance, financial control, purchase and sales organization, labour policy and legal affairs A. & F. Harvey were in a position to provide the necessary supervision and direction in a quick and continuous manner as they had their offices in Madurai and Tuticorin. Their extensive engineering workshops and one of their experienced engineers who has been trained in British Titan Products' factory in plant and machinery maintenance, are at the disposal of Travancore Titanium Products Ltd., for repair and overhaul of parts requiring attention.

Raw materials

6. (a) *Ilmenite.*—(i) Travancore Mineral Concerns (owned by the State Government), Hopkin & Williams (Travancore) Ltd., and F. X. Pereira & Sons (Travancore) Ltd., continue to be the three concerns engaged in working the mineral deposits in Travancore-Cochin State for export purposes. The volume of exports during previous years and the prices at which exports were effected are given in the last report of the Commission. The exports during 1953 and 1954 were 211,102 tons and 211,551 tons respectively. The naked-at-works floor price during 1953-54 was fixed at 70 shillings per ton which worked out to a f.o.b. Atlantic Sea-board price of 150 sh. 9 d. per ton as against 176 sh. 6 d. during 1952-53 due to reduction in ocean freight and insurance charges from 93 sh. to 64sh. per ton. During the above period, the world price f.o.b. Atlantic Sea-board was reported to have been about 142 sh. 6 d. per ton. The naked-at-works floor price during the current shipping season *viz.*, December 1954 to May 1955 has been raised to 75 shillings per ton. An important development that has taken place since submission of the last report by the Commission relates to the issue in August 1953 of a Notification by Government under the Atomic Energy Act, whereby the grant of licences for export of ilmenite have been made conditional on samples of the product being examined and certified by the Atomic Energy

Commission to contain less than 0·1 per cent. of monazite. We were informed that as a result of this order special processing had to be undertaken by the mining concerns at Travancore, but it was found that the available equipment was not adequate for the purpose.

(ii) At the time of the last inquiry ilmenite cost Travancore Titanium Products Ltd., Rs. 59-15-0 per ton of which Rs. 48-10-9 represented the NAW cost and Rs. 11-4-3 transport and delivery charges, sales tax and cost of gunny bags. It was then estimated that 2·18 tons of ilmenite were required for manufacturing one ton of the pigment. The usage of ilmenite during the nine months under review was reduced to 2·147 tons per ton of pigment. In its 1953 report the Commission recommended that ilmenite should be made available to the Company after recovery of only the "basic charge" which was then stated to be Rs. 14·77 per ton but was expected to be increased to Rs. 18 per ton. After adding delivery etc. charges of about Rs. 11 per ton to the basic charge of Rs. 18 per ton, the Commission expected that the material would cost only Rs. 29 per ton. This recommendation was implemented by the State Government partially and the price of ilmenite was reduced from Rs. 48-10-9 to Rs. 27 per ton which, together with transport and other charges aggregating Rs. 12-9-9 per ton, brought the price of ilmenite during the period under review to Rs. 39-9-9 per ton. We are informed that, by negotiations with transport contractors the Company has succeeded in effecting a reduction in the above charges from Rs. 12-9-9 to Rs. 10-10-9 per ton. The future price of ilmenite would, therefore, be Rs. 37-10-9 per ton. From the memorandum received by us from the State Government we observe that the "basic charge" did not undergo the anticipated upward revision but has remained at Rs. 14·77 per ton. If Travancore Titanium Products Ltd., are asked to pay only Rs. 14·77 per ton (Rs. 14-12-4) so that, together with a sum of Rs. 10-10-9 representing delivery etc. charges, ilmenite would cost the Company only Rs. 25-7-1 per ton and not Rs. 37-10-9, the resultant saving of Rs. 12-3-8 per ton in the cost of ilmenite spread over an anticipated production of 1,800 tons of pigment per year and calculated on the consumption of 2·147 tons of ilmenite per ton of pigment will amount to Rs. 47,260 in the over-all cost of production, and about Rs. 26-4-0 in the cost of the pigment per ton. In view of the undoubted need for reducing the cost of production of titanium dioxide and the desirability of affording assistance to the Company to effect maximum economy we feel that a strong case exists for reduction in the price of ilmenite. This reduction would affect only about 3,900 tons of ilmenite out of a total of over 200,000 tons sold by the State Government to parties, all of whom, except Travancore Titanium Products Ltd., are producers of titanium dioxide in foreign countries. The State Government hold 51 per cent. of the shares in the Company and would be naturally anxious to see that the Company's financial position is improved as early as possible. We, therefore, reiterate our recommendation that the sands which are owned by Government should be made available to the Company after recovering the "basic charge" of Rs. 14·77 only.

(b) *Sulphuric acid.*—(i) It was estimated by the Commission in 1953 that the cost per ton of sulphuric acid supplied to the Company by Fertilizers & Chemicals (Travancore) Ltd., at the former's factory site would be Rs. 181 per ton of 100 per cent. of acid calculated on the basis of cost per ton of imported sulphur multiplied by a conversion factor of 0·375 (fractional ton of sulphur to make 1 ton of acid) plus processing charges (including profit) of Rs. 57 and transport charges of Rs. 32. The Commission then recommended that the State Government should investigate the possibility of revising the agreement between the above two companies with a view to effecting a substantial reduction in the cost of sulphuric acid. In pursuance of this recommendation the conversion factor was reduced from 0·375 to 0·36. During the period under review, the average cost of sulphuric acid including cost of transportation worked out to Rs. 169·362 per ton for 98 per cent. acid. (The rate assumed for the future is Rs. 167·5 per ton.) The reduction in cost was due, partly to some decrease in the price paid for sulphur and the lower conversion factor assumed by Fertilizers and Chemicals (Travancore) Ltd., and partly to reduction in transport charges. We understand that no further reduction in the price quoted by Fertilizers and Chemicals (Travancore) Ltd., is likely in the future. We were also informed that transport of acid over the canal from Alwaye to Trivandrum often resulted in delays due to congestion of country boats in the canal.

(ii) It was estimated by the Commission in 1953 that 4·15 tons of 100 per cent. sulphuric acid would be required for the production of each ton of titanium dioxide. The Company has been able to reduce the usage to 4·0488 tons of 98 per cent. acid per ton of pigment during the period under review. As the supply position of sulphuric acid stands at present it would seem that the only way to effect further reduction in the cost of this raw material is for the Company to have a 25 ton per day acid plant at its own factory and thereby eliminate the charges for transporting the acid from Alwaye to Trivandrum. In the Commission's last report it was observed that, considering the Company's strained financial circumstances, it was not possible for it to instal a plant for the manufacture of sulphuric acid at its factory. A 25 ton acid plant is expected to cost about Rs. 10 lakhs if capital expenditure is not incurred on workshop, services, and other facilities which already exist. It does not appear, however, that the Company which is anxious to have its own sulphuric acid plant will be able to secure necessary finance for it in the near future. Transport of sulphuric acid from Alwaye to Trivandrum costs about Rs. 27 per ton. There would, therefore, be a saving of Rs. 27 per ton in the cost of sulphuric acid if it was produced by the Company at its own factory. As we do not have sufficient data it is not possible for us to say to what extent the saving of Rs. 27 per ton will be offset by the increase in the cost of sulphuric acid due to its production by the Company at its own factory. We, however, feel that a case exists for technical investigation of the financial effects of installing a 25 ton sulphuric acid plant at the Company's factory. If the investigation shows that this would ultimately result in reducing the cost of production of titanium dioxide appreciably, the Government of India should, in consultation with the State Government, consider the feasibility of providing the requisite finance to the Company for installing a 25 ton acid plant at its own factory. We recommend that, meantime, the State Government should render assistance to the Company to eliminate delays in the transport of acid due to congestion in the canal from Alwaye to Trivandrum.

(c) The supply position regarding the other raw materials required for the manufacture of the pigment is reported to be satisfactory. Antimony oxide, sodium sulphide, zinc dust and potassium sulphate are the only items which are now imported.

Rated capacity, production and sales

7. (a) The rated capacity of the factory continues to be 1,800 tons per annum of one type of pigment *viz.*, anatase or rutile. We understand that both grades of titanium dioxide cannot be manufactured simultaneously, and that approximately three weeks' production would be lost at each change-over of plant and machinery if alternate production of the two grades is undertaken. It would, therefore, seem that even with only one campaign of each grade per year, a period of six weeks would be required for the change-over with no production during that time. The loss of production during a period of such change-over is estimated to be 225 tons. Consequently, it would follow that while the rated capacity of the factory may be assumed to be 1,800 tons per annum for one grade only, it would be reduced to 1,575 tons per annum for both grades if one campaign of each grade per year is undertaken. Apart from the loss of production, reserve stocks of both types would require to be concurrently maintained resulting in the locking up of working capital. On account of these two factors the cost of production of both types of pigments would go up. The Commission in its last report observed that it was vital to the building up of the titanium dioxide industry in India that adequate supplies of both types of the pigment should be made available by the Company to consuming industries. Most consumers have expressed a desire that the indigenous industry should take up the production of rutile type of titanium dioxide to the extent that it is required for special purposes. As the demand for anatase type is much greater than that for rutile type, and in view of the special difficulties mentioned above, we have come to the conclusion that during the period of protection that we have recommended, the Company should be permitted to restrict its production to the anatase type alone and that the country's needs of rutile pigment should be met from imports. We were informed by the representatives of Travancore Titanium Products Ltd., at the public inquiry that research was being carried out at the laboratories of British Titan Products Ltd., to modify the process of manufacture in such a way as to make it possible to produce the two grades and minimise loss of production to the maximum extent possible. The results of this research will be available to Travancore Titanium Products Ltd., and it might then be possible for the Company to undertake production of rutile type along with anatase type during the period of protection.

(b) The Company had a carry-over stock of three tons of anatase type of titanium dioxide at the beginning of 1954. The total production during the year 1954 was 1,369·5 tons. The plant commenced working in January but production during that month was only about 5 tons as the machinery had to be recommissioned. During May 1954 the factory suffered a very severe power cut. Despite these features, production was maintained at over 140 tons per month for almost half the period.

(c) Total sales of the pigment by the Company in India during 1954 amounted to 708 tons. Exports to foreign countries aggregated to 437 tons of which 405 tons were to the United Kingdom, 30 tons to Australia and 2 tons to Pakistan. Distribution of samples and losses in transit accounted for about 8 tons. The balance of 219 tons was held at the end of 1954 in the factory, in the selling agents' godowns and in transit. The stock position for the market was therefore satisfactory.

(d) During the year 1954 an offer was made by British Titan Products Co. Ltd., to buy from Travancore Titanium Products Ltd., anatase pigment to the extent of 1,200 tons if they were unable to sell the material in the Indian market. The price offered was Rs. 2,135 per ton f.o.b. Cochin equivalent to Rs. 2,400 per ton landed in the U.K. We understand that this offer holds good for the current year also. The Company had no need to avail itself of the above offer as surplus material to the extent of 405 tons was taken up by a distributor of titanium dioxide in the U.K., some at Rs. 2,450 and some at Rs. 2,270 both f.o.b. Cochin. Thirty tons were sold in the Australian market at Rs. 2,390 c.i.f. Australian ports. The sale of two tons to Pakistan was at Rs. 2,725 c.i.f. Karachi.

(e) It appears that the price offered by British Titan Products Ltd. to buy 1,200 tons of anatase titanium dioxide was higher than the price at which the pigment was then being sold in the United Kingdom, and that the offer was made mainly because they were anxious to secure from the Travancore-Cochin State Government a stable supply of 75,000 tons of ilmenite per year. The offer to buy surplus production of titanium dioxide is advantageous not only to Travancore Titanium Products Ltd., but also to the consumers of this pigment in India, as it will enable the Company to maintain production at full capacity and to keep down the cost of production. We have no doubt that these considerations will be kept in view by the Travancore-Cochin State Government while concluding negotiations for sale of ilmenite in the future.

Indigenous demand

8. During the last inquiry the Tariff Commission estimated the then annual demand for titanium dioxide at between 400 and 500 tons. As regards future demand the Commission felt that it was not possible to arrive at a firm estimate based either on past consumption or on probable future trends. The possibility of titanium dioxide replacing other pigments like lithopone, zinc oxide and white lead in the manufacture of paints was fully considered and the Commission came to the conclusion that lithopone could be replaced to the extent of 75 per cent. in the near future, zinc oxide to the extent of 25 per cent. and white lead to the extent of 25 per cent., but that the process of replacement would be very gradual depending on the pace of technical development and acclimatisation to the use of titanium dioxide. The Commission, therefore, felt that it was reasonable to assume that indigenous demand could be stepped up to 650 to 900 tons per annum. Among the developmental forms of assistance which were recommended for increasing the demand for titanium dioxide, the Commission, recommended a ban on imports of anatase titanium dioxide and progressive restrictions on imports of lithopone. The Commission also expected that with increased adaptation of paint formulations embracing titanium pigment instead of lithopone, the offtake of the former by the indigenous paint industry would go up. The developments envisaged by the Commission have taken place to the extent anticipated. The consumption of titanium dioxide in India during the year 1954 was about 928 tons of which 708 tons was of indigenous anatase pigment and about 220 tons of imported pigment most of which was rutile. The question of demand was discussed at the public inquiry and the consensus of opinion was that the demand for titanium dioxide during the current year could be estimated at 1,100 tons, of

which 900 tons would be for anatase and 200 tons for rutile. It was also agreed that there would be increase of 20 per cent. in demand each year during the next two years. The estimated break-up of the current demand is as follows :—

	Tons
Paint industry	700
Rubber industry	150
Printing ink industry	50
Vitreous enamelware industry	100
Rayon industry	50
Other miscellaneous industries	50
TOTAL	1,100

It is possible that with increasing techincal advice, which the Company is providing to new consuming interests, industries like linoleum, soap and paper may start taking more quantities of the pigment than at present, and that the demand for miscellaneous industries may increase. We have provided for this expansion in our estimate of the increased percentage in assessing the future demand.

Factors governing the maintenance of demand

9. (a) The evidence received by us shows that the paint industry has accepted, in principle, the replacement of lithopone by titanium dioxide to a progressively increasing extent but considers that the restrictions on imports of lithopone during 1954 were somewhat high. It has stated that the demand for paints with lithopone formulations is still prevalent and that lithopone is required for under coats, ready mixed paints, fillers, stoppers, distempers, etc. The representative of the Development Wing of the Ministry of Commerce and Industry present at the inquiry informed us that the import quota for lithopone during the two licensing periods in January to December 1954 was limited to an aggregate of one-third of the consumption in the previous year. He also stated that in response to persistent demand the aggregate of the quota had been increased during the current licensing period to 50 per cent. of the consumption during 1953. The representative of the paint industry stated, however, that difficulties due to restriction on imports of lithopone were being experienced only by established large scale manufacturers of paints who utilised all the lithopone imported by them for the manufacture of paints, but that, on the other hand the smaller manufacturers of paints were taking advantage of scarcity of supply of lithopone and were selling the material in the retail bazzar, on occasions, at rates as high as Rs. 70 to Rs. 80 per cwt. while the import price was only Rs. 45 per cwt. The import policy for lithopone provides for *ad hoc* licences being granted to actual consumers. We were informed by the representative of the Development Wing that it was difficult to differentiate between *bona fide* consumers and others. We realise that the situation arising from percolation of imported lithopone into the retail bazzar is difficult to control. Nevertheless, we feel that adequate notice should be taken of the fact that, while imports of lithopone in 1953 were only 757 tons, they amounted to about 1,100 tons in 1954. As this has happened despite restrictions of imports to one-third, the quantity

that will be allowed in 1955 as a result of the liberalisation during the current licensing period to 50 per cent. may be much higher and may worsen the position. The recommendation made by the Commission in 1953 was that lithopone imports should be *progressively restricted* not merely for conserving foreign exchange but also for encouraging the usage of titanium dioxide. We are, therefore, not in favour of any liberalisation and recommend that *ad hoc* licences to actual users should be carefully screened, and the tendency to use lithopone extensively, discouraged. Lithopone being an imported product should not be allowed to harm the interests of a growing indigenous industry which is in need of protection. The basic raw material required for the production of lithopone is zinc which has also to be imported from abroad. There is only one factory in India producing lithopone with an installed capacity of 120 tons per year whose production during 1953 and 1954 was 26 and 22 tons respectively. Taking into consideration all these factors we reiterate the view expressed by the Commission in its report of 1953 that direct steps should be taken to prevent the inroad of lithopone into the market for titanium dioxide.

(b) Rutile titanium dioxide is not being manufactured in India at present and there is a danger that it may be made available by foreign manufacturers to importers at about the same price as anatase, although normally the price should be slightly higher. In the paint industry, in particular, the rutile type could very well be used where anatase is required. Its covering power is also slightly greater. There is therefore a possibility that applications for imports of rutile pigment may be made by consumers in excess of their requirements. If the applications are not carefully scrutinised, and quantities in excess of requirements are imported, the indigenous titanium dioxide industry may suffer. We, therefore, recommend that until such time as Travancore Titanium Products Ltd. are not in a position to manufacture rutile type of pigment, imports of the material should be very carefully regulated and permitted only to the extent of actual requirements of the consumers.

Quality of indigenous titanium dioxide

10. (a) From the evidence received by us from various classes of consumers, we find that the quality of the anatase pigment produced by Travancore Titanium Products Ltd., is satisfactory and compares very well with that of the foreign product. In its memorandum the Paint Federation had stated that the colour of the pigment was slightly yellowish, but otherwise, the quality was quite satisfactory. The question of colour was discussed at the public inquiry when the representative of the Paint Federation explained that the complaint was of a minor nature; that it referred to the period immediately after the plant was recommissioned in January 1954, and that, progressively thereafter, the standard of production had greatly improved, and the product was considered without blemish. Representatives of the rubber, linoleum and soap industries have all expressed satisfaction with the quality. The printing ink industry has no complaint about the anatase pigment, but prefers rutile for certain special types. The fact that 405 tons of pigment have been exported to the United Kingdom and thirty tons to Australia

speaks well of the quality of the product. Satisfactory test reports have also been received by the Company from British Titan Products Ltd.

(b) At the time of the last inquiry it was felt that a special type of imported anatase pigment was essential for enamelware manufacturers in the country. The Company has since been offering a granular type of anatase pigment suited to the vitreous enamel trade, and certain members of the Vitreous Enamellers' Association who have used it have found it to be satisfactory.

(c) At the time of the last inquiry doubts were expressed by rayon manufacturers about the suitability of the indigenous pigment for their use from the point of view of its particle size. With a view to obviating any objection that may be raised by the rayon industry the Company grinds the pigment to a fineness comparable to the fineness of the imported grade favoured by rayon manufacturers. Rayon yarn producers have not had occasion to test the pigment either because they have not been producing dull yarn or because stocks of imported material were available to them for use. The representative of the National Rayon Corporation who was present at the public inquiry informed us that he had found the material chemically satisfactory but could not definitely say if the particle size was suitable, except after carrying out necessary trials. He, however, did not envisage any difficulty in employing the indigenous pigment in its present finely ground form. We are, therefore, of the opinion that imported pigment is not required in the future for manufacturers of rayon yarn. The Company invited our attention to the fact that during the last quarter of 1954 import licences aggregating in value to Rs. 1,25,000 (in quantity over 60 tons) were granted to two rayon factories for importing titanium dioxide. We found on inquiry that the licences had been utilised only to a small extent. In view of what we have stated above, we do not think there is any further need for importing any special type of titanium dioxide for the rayon yarn industry.

Imports and import control policy

11. (a) Figures relating to imports of titanium dioxide are not separately recorded in the "Accounts relating to the Foreign (Sea. Air and Land) Trade and Navigation of India". However, pursuant to the Commission's recommendation in its report of 1953, the Director-General of Commercial Intelligence and Statistics has been furnishing information relating to imports of titanium dioxide in his monthly returns relating to protected commodities from February 1954. According to these returns, the total imports of the pigment from February to November 1954 aggregated 201·7 tons. We think it likely that the total imports during the year were of the order of 220 tons. In the absence of a specific recommendation to the effect that statistics of imports for the two types of the pigment should be recorded separately, arrangements were not made to record separate figures. We consider that this is necessary and, therefore, recommend that arrangements should be made by the Director-General of Commercial Intelligence and Statistics, for recording statistics of imports for rutile and anatase types of titanium dioxide separately in future.

(b) Licences for imports of titanium dioxide have been granted *ad hoc* only to actual users during the year 1954. This policy is being continued during the current half-year.

Existing rate of duty

12. Titanium dioxide is assessed to duty under item No. 30(14) of the First Schedule to the Indian Customs Tariff ; the relevant extract from the 39th issue (as in operation from 15th May 1954) of the Indian Customs Tariff Schedule is given below :—

Item No.	Name of article	Nature of duty	Standard rate of duty	Duration of protective rate of duty
30(14)	Titanium dioxide—			
	(*a*) of British manufacture . .	Protective	25 1/5 per cent. *ad valorem* plus one-fourth of the total duty.	*December 31st, 1954.
	(*b*) not of British manufacture . .	Protective	35 1/5 per cent. *ad valorem* plus one-fourth of the total duty.	*December 31st, 1954.

*Since extended to December 31st, 1955, by the Indian Tariff (Third Amendment) Act 1954.

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Commission's estimate of cost of production and fair ex-works price of indigenous titanium dioxide

13. (a) The Assistant Cost Accounts Officer has examined the cost of production of titanium dioxide at the factory of Travancore Titanium Products Ltd., and has submitted to us his cost report. We have discussed the cost data with the representatives of the Company, and, in consultation with them, we have prepared our estimate of the future cost of production and fair ex-works price of anatase titanium dioxide. As the Company's representatives desired that the details of costs should be kept confidential, we are forwarding the report of the Cost Accounts Officer as a separate enclosure to this report. The period undertaken for investigation covers the nine months from January, 1954 to the end of September, 1954. The quantity of pigment produced during this period was about 938 tons (anatase). The material under processing in the different stages of manufacture has been assessed as equivalent to about 142 tons of pigment, bringing the total production to about 1,080 tons. The Company's system of process costing is satisfactory and has made it possible for expenses relating to the different stages of manufacture being assessed properly at the individual stages. The following statement gives the break-down under main heads of the actual cost of production for the period

January—September, 1954, and our estimate of the future cost per ton of anatase titanium dioxide :—

	Actuals January—September 1954	Estimate for future
	Rs.	Rs.
1. Raw materials	868·53	848·22
2. Power and fuel	288·98	265·09
3. Process labour and materials	65·90	55·28
4. Repair labour and materials	47·32	75·00
5. Process maintenance and supervision	38·61	36·28
6. Other overheads	210·37	244·31
7. Depreciation	443·77	293·57
8. Packing	35·68	51·91
TOTAL	1999·16	1869·66
9. Interest on working capital	..	22·96
10. Return on block	..	352·96
		2245·58
Add margin for contingency	..	40·00
		2285·58
		Rs. 114.279 per cwt.

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(b) The following factors have been taken into account in estimating the fair ex-works price for the future :—

(i) *Production.*—We have assumed that only anatase type of pigment will be manufactured by the Company [*vide* paragraph 7 (a)] and that production will be up to the full capacity of the factory *viz.*, 1,800 tons. [The assumption of this production despite an estimated domestic demand of only 900 tons for anatase pigment (with probable increase of 20 per cent. per year) was on the basis that the balance of production will be purchased by British Titan Products Ltd. (*vide* paragraph 7 (d).]

(ii) *Raw materials.*—Quantities of consumption of raw materials have been assumed at the same rates as those relating to the nine months ended 30th September, 1954. Costs have been calculated on the latest purchase prices of the materials.

(iii) *Power and fuel.*—The consumption of diesel oil had been assumed at 120 gallons per ton of pigment as against 131 gallons during the investigated period, and the cost calculated on the latest price paid per gallon. The consumption of electric power has been assessed on the average monthly offtake.

(iv) *Process labour and material.*—These have been estimated on the basis of average expenditure with suitable adjustments for increase in basic salary and wages at 5%. Despite the increase, the amount assumed under this head is less than the actual cost during the investigated period on account of increased production.

(v) *Repair labour and material.*—The level of expenditure incurred during the period investigated provides no indication of the possible expenditure in the future. No major repairs or general overhauling of the plant were undertaken during the investigated period as it had been recommissioned only in January 1954. Many sections of the plant are subject to highly corrosive action and require periodical renovation, as for instance, linings of the digestion tanks and the kiln. After assessment of the factors mentioned above, we have allowed a sum of Rs. 75 per ton in our estimate under this head.

(vi) *Process and maintenance supervision.*—The amount allowed under this head, except for adjustment for increase in the basic salaries and wages, has been maintained at the level of actuals. Despite increase, the amount assumed under this head is less than the actual cost during the investigated period on account of increased production.

(vii) *Other overheads.*—The Company's developmental programme in the current and succeeding years includes schemes for investigations on behalf of consuming industries like vitreous enamel, rayon, paper and printing ink, besides research and technical after-sales service on an increased scale for expanding the internal market for the pigment. We have discussed the matter with the Company's representatives and are satisfied that a liberal provision should be allowed for laboratory charges and technical services in the case of a pigment like titanium dioxide, the technical possibilities of which are yet to be proved among new consuming industries. We have, therefore, assessed the cost of these charges and services at Rs. 90·50 per ton for the future as against Rs. 23·50, arrived at on the basis of actual expenses incurred during last year when the work undertaken was very limited in scope and diversity.

(viii) *Depreciation.*—Depreciation has been calculated at normal income-tax rates on the written down value of the plant excluding that of the equipment intended specifically for manufacturing the rutile type of pigment.

(ix) *Packing.*—The cost of improved packing in hessian lined packing bags of 56 lbs. capacity has been provided for, on the basis of actual costs incurred during the investigated period.

(x) *Interest on working capital.*—Interest at 4½% on an amount equivalent to 4 months' cost of production has been allowed.

(xi) *Return on block.*—The block for the manufacture of anatase grade works out to Rs. 63·049 lakhs. We have calculated return at 10% of this amount.

(xii) *Margin for contingencies.*—The Company suffered from a severe power cut in May-June of 1954 and experienced, in addition, 140 power failures in 1954. Most of these failures lasted for not more than a few minutes each, but some lasted for more than an hour. All power failures result in plant and machinery being stopped, and owing to slackening of momentum, the production is proportionately reduced. The quality of the product can also be adversely affected by sudden change in heat conditions in the calciner, resulting in the need for retreatment of the material. A short-fall in production might result on account of these and other factors which militate against the maintenance of ideal working conditions. We have assessed the margin required for contingencies at 2% of the cost of production and have allowed Rs. 40 per ton on account of contingencies.

(c) About 60 per cent. of the pigment production is being marketed at Calcutta and the balance 40 per cent. at Bombay, most of the consuming industries being situated round about these ports. The charges incurred by the Company in transporting pigment to the above ports comprise transport charges from Trivandrum to Cochin, shipping charges from Cochin to Calcutta and Bombay and clearing charges at the two ports. The aggregate of these items amounts to Rs. 142 per ton or Rs. 7·1 per cwt., which has to be added to the fair ex-works price of the pigment for purposes of comparison with the landed cost of the imported pigment. The fair ex-works price plus freight charges amounts to Rs. 121·379 or Rs. 121-6-8 per cwt.

C.i.f. prices and landed costs of imported titanium dioxide

14. Particulars of c.i.f. prices etc. of imported titanium dioxide obtained from Collectors of Customs are given in Appendix III. We are interested in the prices of anatase type only, but information regarding the types to which the above mentioned c.i.f. prices relate are not available in all cases. The lowest specified quotation in the statement is the one pertaining to import of anatase pigment from West Germany on 1-2-1954 at Rs. 96-10-8 per cwt. As this quotation relates to a consignment received about a year ago, and as international prices of titanium dioxide have since been fluctuating, we have considered it advisable to obtain the latest f.o.b. price of the pigment manufactured by British Titan Products Ltd., in the United Kingdom as being representative of the present international price. We understand that the f.o.b. price of U.K. anatase titanium dioxide is £. 135 per ton. After adding to this amount £. 10 towards sea freight and £. 1 towards marine insurance the c.i.f. price would be £. 146 per ton or Rs. 97-5-0 per cwt. Clearing charges have been estimated at Rs. 1-4-0 per cwt. so that the landed cost of anatase pigment without duty from U.K. will work out to Rs. 98-9-0 per cwt.

Comparison of fair ex-works price (with freight allowance) of indigenous titanium dioxide with landed cost of the imported product

15. The following table shows a comparison of the fair ex-works price of indigenous anatase titanium dioxide (with freight allowance) with the landed cost of imported U.K. pigment :—

		Rs.	As.	Ps.
(*i*)	Fair ex-works price *plus* freight allowance	121	6	8
(*ii*)	C. i. f. price	97	5	0
(*iii*)	Clearing charges	1	4	0
(*iv*)	Landed cost without duty	98	9	0
(*v*)	Difference between fair ex-works price (with freight allowance) and landed cost without duty (i–iv)	22	13	8
(*vi*)	The above difference as percentage of the c. i. f. price	23·5		

Measure of protection

16. The titanium dioxide industry has enjoyed protection for about 16 months and during this period made remarkable progress. The production in 1954 was 1,369·5 tons of which 708 tons were sold in India and 437 tons in the United Kingdom and Australia. The quality of the indigenous titanium dioxide (anatase) has been found to be satisfactory and equal to that of the imported product. Travancore Titanium Products Ltd., now propose to increase their production to 1,800 tons per year by working their plant to its full capacity. They have prepared a programme for intensifying their research, technical after-sales service, etc., with a view to popularising the use of their titanium dioxide among industries which are at present using other pigments and thereby expanding the domestic market. They would be able to undertake all these activities provided they were assured that adequate protection would be continued for a further period. Besides, it is in the national interest to develop this important industry whose basic raw material is available in the country in plenty. We have, therefore, come to the conclusion that protection to this industry should be continued for a further period of two years, *i.e.*, up to 31st December, 1957. The statement given in paragraph 15 shows that a duty of 23·5 per cent. is required to equate the fair ex-works price of the indigenous titanium dioxide (anatase) plus freight allowance with the landed cost without duty of the imported product. We have already referred in paragraph 9(b) to the possibility of rutile type of titanium dioxide whose price is normally higher than that of anatase type being used in place of the latter if imports of the former take place on an increasing scale. We, therefore, consider that in fixing the duty which would be applicable to both anatase type and rutile type of titanium dioxide, this factor should be taken into account. The existing rates of duty are 25 1/5 per cent. *ad valorem* plus one-fourth of the total duty for products of British manufacture and 35 1/5 per cent. *ad valorem* plus one-fourth of the total duty for products of non-British manufacture. We recommend that protective duty at the existing rates should be levied on titanium dioxide (anatase as well as rutile) for a further period of two years, *i.e.*, up to 31st December, 1957.

Ancillary recommendations

17. (a) The question of sale of paints bf weight instead by volume was discussed during the public inquiry and the various interests concerned expressed their willingness to submit to legislation in the matter if that was found possible by Government. The progress achieved in this direction would still appear to be slow. Both technical and trade opinion is in full agreement with the desirability of effecting the change-over. We recommend that Government should give their attention to the question of securing general acceptance of the practice of sale of paints by volume instead of by weight and examine the possibility of initiating legislation to this effect.

(b) We have recommended protection to the industry by levy of duty at the existing rates up to 31st December, 1957. If this recommendation is accepted by Government, we consider that it is essential that during the period of protection Travancore Titanium Products Ltd., should strengthen their financial position by wiping out their losses, by repaying a part of the loan taken from the Industrial Finance Corporation together with interests thereon, and by building up reserves.

Summary of conclusions and recommendations

18. Our conclusions and recommendations are summarised as under :—

(1) Ilmenite sands which are owned by Government should be made available to Travancore Titanium Products Ltd., after recovering the "basic charge" of Rs. 14·77 only.

[Paragraph 6(a) (ii)]

(2) If the technical investigation of the financial effects of installing a 25 ton sulphuric acid plant at the factory of Travancore Titanium Products Ltd., shows that installation of such a plant would ultimately result in reducing the cost of production of titanium dioxide appreciably, the Government of India should, in consultation with the Travancore-Cochin State Government, consider the feasibility of providing the requisite finance to Travancore Titanium Products Ltd., for the installation of a 25 ton sulphuric acid plant at their own factory.

[Paragraph 6(b) (ii)]

(3) The Travancore-Cochin State Government should render assistance to the Company to eliminate delays in the transport of sulphuric acid due to congestion in the canal from Alwaye to Trivandrum.

[Paragraph 6(b) (ii)]

(4) The rated capacity of the factory of Travancore Titanium Products Ltd., is 1,800 tons per annum of one type of pigment, *viz.*, anatase or rutile. If alternate production of the two types is undertaken there will be loss of production to the extent of about 225 tons with only one campaign of each type per year. Alternate production would also necessitate the building up of reserve stocks and the consequent locking up of working capital. There would be corresponding rise in the cost of production. In the circumstances the Company should be permitted during the period of continuance of protection to restrict its campaign to the anatase type alone, and the country's needs of rutile pigment should be met from imports.

[Paragraph 7(a)]

(5) The demand for titanium dioxide during the current year is estimated at about 1,100 tons of which 900 tons would be for anatase and 200 tons for rutile. The estimated increase each year during the next two years is 20 per cent.

[Paragraph 8]

(6) *Ad hoc* licences to actual users of lithopone should be carefully screened and the tendency to use lithopone extensively, discouraged.

[Paragraph 9(a)]

(7) Until such time as Travancore Titanium Products Ltd., are not in a position to manufacture rutile type of pigment, imports of this material should be carefully regulated and permitted only to the extent of actual requirements of the consumers.

[Paragraph 9(b)]

(8) The quality of the anatase pigment produced by Travancore Titanium Products Ltd., is satisfactory. The granular type of anatase pigment produced by the Company for the vitreous enamel trade has been found to be suitable. No difficulty is envisaged in employing the indigenous pigment in its present finely ground form for the manufacture of dull rayon. There is no further need for importing any special type of titanium dioxide for the use of vitreous enamel and rayon yarn manufacturers.

[Paragraph 10]

(9) Statistics of imports of titanium dioxide should be maintained separately for rutile and anatase types of pigments.

[Paragraph 11(a)]

(10) Protection to the titanium dioxide industry should be continued up to 31st December, 1957, by levying protective duty at the existing rates namely 25 1/5 per cent. *ad valorem* plus one-fourth of the total duty for products of British manufacture and 35 1/5 per cent. *ad valorem* plus one-fourth of the total duty for products of non-British manufacture.

[Paragraph 16]

(11) Government should give their attention to the question of securing general acceptance of the practice of sale of paints by volume instead of by weight and examine the feasibility of undertaking legislation to this effect.

[Paragraph 17(a)]

(12) During the period of protection Travancore Titanium Products Ltd., should strengthen their financial position by wiping out their losses, by repaying a part of the loan taken from the Industrial Finance Corporation together with interest thereon, and by building up reserves.

[Paragraph 17(b)]

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Acknowledgements

19. We wish to express our thanks to the representatives of the producing firm, consumers and distributors for furnishing us with valuable information on various aspects of this industry. Our thanks are also due to Dr. P. V. Nair, Director of Industries, Travancore-Cochin State and Shri N. Srinivasan, Development Officer, Development Wing, Ministry of Commerce and Industry, Government of India, for their assistance in connection with this inquiry.

M. D. BHAT, *Chairman.*

B. N. DAS GUPTA, *Member.*

C. RAMASUBBAN, *Member.*

RAMA VARMA, *Secretary.*

BOMBAY ;
Dated 8th March, 1955.

APPENDIX I

[*Vide* paragraph 2(a).]

List of persons, associations and others to whom the Commission's questionnaires were issued and from whom replies or memoranda were received

PRODUCER

*Travancore Titanium Products Ltd., Kochu Veli, Trivandrum-7, Travancore-Cochin State.

CONSUMERS

1 *Goodlass Wall Ltd., Forbes Building, Home Street, Fort, Bombay.

2 Noble Paint and Varnish Co. Ltd., Ferguson Road, Lower Parel, Bombay-13.

3 Elephant Oil Mills Ltd., Rustom Building, Churchgate Street, Bombay-1.

4 *Shalimar Paint, Colour and Varnish Co. Ltd., 6, Lyons Range, Calcutta-1.

5 Murarka Paint and Varnish Works Ltd., 4-E, Dalhousie Square, Calcutta.

6 *Jenson & Nicholson (India) Ltd., 2, Fairlie Place, Calcutta-1.

7 P. C. Chanda and Co., P. 2, Mission Row Extension, Calcutta.

8. Alkali and Chemical Corporation of India Ltd., 34, Chowringhee Road, Calcutta.

9 *Addisons Paints and Chemicals Ltd., P. O. Box No. 851, Sembiam, Madras-11.

10 *India Linoleums Ltd., 8, Royal Exchange Place, Calcutta-1.

11 *Godrej Soaps Ltd., 316, Delisle Road, Jacob Circle, Bombay-11.

12 *Tata Oil Mills Co. Ltd., Bombay House, Bruce Street, Fort, Bombay.

13 Kores (India) Ltd., Plot No. 10, Off Haines Road, Worli, Bombay-18.

14 *Hooghly Ink Co. (Bombay) Ltd., 15, Kumpta Street, Bombay-1.

15 *Coates of India Ltd., Haines Road, Bombay-18.

16. *Sirsilk Ltd., Sirpur-Kaghaznagar (C. Rly.), Hyderabad State.

17 *Jasmine Mills Ltd., Mahim, Bombay-16.

18 *National Rayon Corporation Ltd., Ewart House, Bruce Street, Bombay-1.

19 National Paints Ltd., Delhi Road, Rohtak.

20 *Gwalior Rayon Silk Mfg. (Wvg.) Co. Ltd., P. O. Birlagram, Nadga (Western Rly.)

CONSUMER-ASSOCIATIONS

1 *Indian Paint Manufacturers' Association, 23-B, Netaji Subhas Road, Calcutta-1.

2 *Paint Federation, Post Box No. 280, Royal Exchange, Calcutta.

3 *Association of Rubber Mfrs.' in India, 57-B, Free School Street, P. O. Box 391, Calcutta.

4 Indian Rubber Industries Association, 7, Homji Street, Bombay.

5 Vitreous Enamellers' Association, 60/2, Dharmtalla Street, Calcutta-13.

6 Indian Soap and Toileteries Makers' Association, P.11, Mission Row Extension, Calcutta.

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*Those who replied.

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APPENDIX II

[*Vide* paragraph 2(b).]

List of persons who attended the Commission's public inquiry on 13th January, 1955

PRODUCERS

1. Dr. A. Bowman	representing	Travancore Titanium Products Ltd., Kochu Veli, Trivandrum-7, Travancore-Cochin State.
2. Mr. H. Prior		
3. Shri M. G. Gadgil		

CONSUMERS

1. Mr. W. E. Norris	representing	Paint Federation, Post Box No. 280, Royal Exchange, Calcutta.
2. Shri V. P. Ogale	,,	Vitreous Enamellers' Association, 60/2, Dharmtalla Street, Calcutta-13.
3. Shri P. G. Phatak		
4. Shri Jaswantlal S. Patel	,,	Indian Enamel Works Ltd., Kasturchand Mills Compound, Tulsipipe Road, Bombay-14.
5. Mr. F. A. Davis	,,	Hoogly Ink Co. (Bombay) Ltd., 15, Kumpta Street, Bombay-1.
6. Shri J. J. Mehta	,,	National Rayon Corporation Ltd., Ewart House, Bruce Street, Bombay-1.
7. Shri A. C. Shah		
8. Shri V. S. Iyer	,,	T. T. Krishnamachari & Co., Co-operative Insurance Bldg., Sir P. M. Road, Bombay-1. (Selling agents to producers.)
9. Shri S. N. Iyer		

GOVERNMENT OFFICIALS

1. Dr. P. V. Nair, Director of Industries & Commerce, Government of Travancore-Cochin, Trivandrum.
2. Shri N. Srinivasan, Development Officer (Chemicals), Ministry of Commerce and Industry (Development Wing), New Delhi.
3. Shri R. C. Shelat, Principal Appraiser, Office of the Collector of Customs, New Custom House, Bombay.

APPENDIX III

(*Vide* paragraph 14.)

Statement of c.i.f. prices imported titanium dioxide obtained from Collectors of Customs

(Price per cwt.)

Source of information	Origin of import	Date of import	C.i.f. price		
			Rs.	As.	Ps.
	(a) Analase type				
1. Collector of Customs, Calcutta	West Germany	19-8-53	122	6	0
	West Germany	1-10-53	106	12	10
	West Germany	13-11-53	84	0	7
	West Germany	13-11-53	100	11	0
	West Germany	14-11-53	97	2	4
	West Germany	1-2-54	96	10	8
	Italy	9-11-53	114	2	5
	Japan	29-7-54	208	2	8
	U. S. A.	19-2-54	126	0	0
2. Collector of Customs, Bombay	West Germany	May 1954	100	0	0
	(b) Rutile type				
1. Collector of Customs, Calcutta.	West Germany	6-1-54	112	0	6
	U. K.	6-1-54	121	9	7
2. Collector of Customs, Bombay	U. K.	October 1954	178	3	0
	U. S. A.	October 1954	154	12	9
3. Collector of Customs, Madras	West Germany	24-8-54	200	10	8
	(c) Type not specified				
Collector of Customs, Calcutta	U. K.	23-7-53	100	11	6
	U. K.	4-11-53	99	15	6
	U. K.	4-11-53	179	11	9
	U. K.	6-11-53	98	11	2
	U. K.	11-11-53	103	1	1
	U. K.	10-12-53	98	0	6
	U. K.	10-12-53	114	8	6
	U. K.	11-12-53	98	0	6
	West Germany	28-7-53	110	11	10
	West Germany	19-8-53	97	10	5
	West Germany	2-11-53	97	2	3
	West Germany	12-12-53	96	3	2
	West Germany	29-12-53	111	3	1

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